

ABSTRACT OF THE INVENTION

An apparatus and method is provided for determining the minority carrier diffusion length from the back side of the wafer within predetermined areas using pattern recognition system. In particular embodiments SPV probe includes transparent and non-transparent electrodes, to provide measurement of SPV and in area larger than optical beam and to provide accurate determination of diffusion length with spatial resolution <1mm. The apparatus includes the ability to measure diffusion length from the areas under special areas within scribe line of patterned wafer. This apparatus and method provides a determination of the diffusion length to control metal contamination in product including patterned wafers including measurement within scribe lines and full wafer mapping.